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Abstract

A Japanese General Social Survey is used to re-examine how voluntary giving is associated with inequality aversion, and how the relationship differs between high- and low-income groups. This paper also investigates how social capital influences that relationship. The key findings are that (1) the level of voluntary giving increases with inequality aversion for high-income groups, but not for low-income groups, and (2) social capital accumulated in the respondent's residential area reinforces the positive influence of inequality aversion on voluntary giving for high-income groups only.

JEL classification: H41, C34, C35, D63, Z13.

Keywords: Inequality aversion, charitable contribution, trust, private provision of public goods.

1. Introduction

Derin-Güre and Uler (2010) used a General Social Survey (GSS) conducted in the United States to examine how an individual's inequality aversion influenced charitable giving. They found a positive association between inequality aversion and charitable giving for high-income earners and a negative association for low-income earners.

In addition to an individual's characteristics, the economic environment of an individual's residential area is thought to influence a person's charitable behavior (Fehr and Schmidt 1999). For instance, labor union member density is positively related to per capita donations (Zullo 2011). Putnam (2000) stated that the degree of community involvement is considered a type of social capital, which facilitates coordination and cooperation to increase social welfare. In contrast, "an envious or malicious person presumably would feel better off if some other persons become worse off in certain respects. He could "harm" himself (i.e., spend his own resources) to harm others" (Becker 1996, 190). Social interaction among people plays an important role in terms of an individual's decision making because the utility function of a person includes the reactions of others to his/her actions (Becker 1974). Frequent interactions among community members are thought to increase negative externalities such as envy toward richer members.[1] Accordingly, a hypothesis is proposed that *community participation increases the positive effect of an individual's inequality aversion on the private voluntary contributions of high-income earners*. Using individual-level data from Japan, this paper aims to test the above hypothesis.

[1] Yamamura (2012) suggested that richer people prefer income redistribution in areas with higher rates of community participation, which implies that negative externalities lead richer people to be more altruistic.

2. Data and Model

This study uses data sourced from a Japanese General Social Survey (JGSS), which was designed as a Japanese counterpart to the GSS in the United States.[2] Therefore, this paper presents findings that can be compared with those of Derin-Güre and Uler (2010), who provided evidence based on GSS data. However, the JGSS only provides data regarding private charitable contributions from 2005, although the JGSS was conducted from 2000 to 2010. Hence, this paper uses a 2005 data set based on JGSS data. Following Derin-Güre and Uler (2010), the study sample here was divided into three groups (high-income, middle-income, low-income). Respondents who considered themselves above or high above average income earners are classified as high-income, average earners are classified as middle-income, and below average and far below average are classified as low-income.

Following Derin-Güre and Uler (2010), the estimated function takes the following form:

$$CONTRIBUT_i = \alpha_0 + \alpha_1 INEQL_i + \alpha_2 Social\ capital_m + \alpha_3 Age_i + \alpha_4 Marry_i + \alpha_5 Number\ of\ Child_i + \alpha_6 Male_i + \alpha_7 Schooling_i + \alpha_8 Income_i + \varepsilon_m + u_i,$$

where $CONTRIBUT_i$ is the private charitable contributions of individual i, which is estimated by yen value. Regression parameters are denoted by α and u_i is the error term. Individuals appear to be influenced by the various experiences and circumstances that surround the area they grew up in. To capture this effect, this study incorporates ε_m, which are dummies for prefecture m where respondents

[2]Data for this secondary analysis, "Japanese General Social Surveys (JGSS), Ichiro Tanioka," was provided by the Social Science Japan Data Archive, Information Center for Social Science Research on Japan, Institute of Social Science, The University of Tokyo.

resided at 15 years of age. A Japanese prefecture is the equivalent to a state in the United States or a province in Canada. Dependent variable, $CONTRIBUT_m$ is interval-coded data and this study uses an interval regression model for the estimations (Wooldridge 2002, 508–509).[3]

The proxy for inequality aversion (*INEQL*) was generated as follows. Respondents were questioned about income redistribution: "What is your opinion of the following statement? It is the responsibility of the government to reduce the differences in income between families with high incomes and those with low incomes." There were five response options, ranging from "1 (strongly disagree)" to "5 (strongly agree)". The proxy for inequality aversion, *INEQL,* are the values chosen by the respondents. It is expected that that people who support income redistribution are more inequality averse.

The degree of community participation within a respondent's residential area is considered as a type of social capital (Putnam 2000). The influence of neighbors appears to be greater when people are more inclined to participate in community activities. That is, people are thought to be influenced by neighbors to a greater extent when they live in areas with higher levels of community participation. In this paper, the proxy for social capital is generated using a survey conducted by the Japan Broadcasting Corporation (Japan Broadcasting Corporation 1997). One of the survey questions asked, "Do you actively participate in community activities?" Respondents could choose one of three responses: "yes", "unsure", or "no". Thus, $Social\ capital_m$ is the number of respondents who answered "yes" within a

[3] Detailed information about JGSS data such as interval-codes for private charitable contributions is available from the author upon request. Basic statistics for the variables used in this paper are also available upon request.

prefecture.

Derin-Güre and Uler (2010) showed that the coefficient of *INEQL* takes the significant positive sign for high-income groups, whereas *INEQL* takes the significant negative sign for low-income groups. In this paper, in addition to the dependent variables used in Derin-Güre and Uler (2010), a cross term between an individual's inequality aversion ($INEQL_i$) and degree of community participation in their residential area ($Social\ capital_m$) was also incorporated. If the hypothesis presented in the introduction is supported, the sign of $INEQL_i * Social\ capital_m$ becomes positive for high-income groups.

Various individual characteristics were used as control variables, including age, marital status, number of children, gender, schooling years, and household income.

3. Results

Table 1 shows the re-examination of the results of the United States study by Derin-Güre and Uler (2010). The signs for *INEQL* are negative and positive for low-income and high-income groups, respectively. Furthermore, *INEQL* is not statistically significant for low-income groups, whereas it is statistically significant for high-income groups. The significant positive effect of *INEQL* is equivalent to that of the United States study. However, the significant negative effect of *INEQL* was observed in the earlier United States study but not for Japan. It is interesting to note that differences in socio-economic backgrounds between Japan and the United States influence the charitable behavior of low-income individuals in the two countries, while the difference does not change the behavior of high-income individuals.

Table 2 shows the cross term of $INEQL_i * Social\ capital_m$, and it produces the

positive sign in all columns. However, $INEQL_i$ * $Social\ capital_m$ becomes statistically significant at the 5% level only for high-income groups. This implies that the level of community participation within a residential area only increases the positive effect of an individual's inequality aversion on private charitable contributions for high-income groups. The marginal effects of *INEQL* and *Social capital* both produce the positive sign for high-income groups, whereas they yield the negative sign for low-income groups. Furthermore, regarding high-income groups, *INEQL* is statistically significant at the 1% level whereas *Social capital* is not statistically significant. Neither *INEQL* nor *Social capital* become statistically significant for low-income groups. Hence, the results for the marginal effects of *INEQL* and *Social capital* are in line with results shown in Table 1.

Thus, it can be argued that the results in Table 2 show that community participation does not directly influence the private charitable contributions of high-income groups, but indirectly increases the level of charitable contributions, and therefore increases the positive effect of an individual's inequality aversion.

4. Conclusions

The estimation results based on the JGSS show that voluntary giving increases with inequality aversion for high-income groups, but not for low-income group. This is consistent with evidence from the United States based on the GSS (Derin-Güre and Uler 2010). Furthermore, the degree of community participation in a respondent's residential area only increases the positive influence of inequality aversion on voluntary giving for high-income groups. Thus, social capital increases the psychological cost for high-income earners not to give private voluntary contributions.

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Table 1. Interval regression estimates: dependent variable is the amount of the private voluntary contribution

	(1) Total	(2) Low income	(3) High income
INEQL	–1.12	–5.76	30.1*
	(–0.20)	(–0.70)	(1.95)
Age	2.78***	2.14***	3.88***
	(5.92)	(3.32)	(2.20)
Marry	–3.94	22.6	–175.0***
	(–0.22)	(1.08)	(–2.90)
Number of children	1.54	1.78	–63.3***
	(0.26)	(0.23)	(–3.34)
Male	2.29	–14.5	68.3**
	(0.20)	(–0.91)	(2.20)
Schooling	5.95**	3.30	8.37
	(2.03)	(0.84)	(0.77)
Income	0.04***	–0.03	0.11***
	(3.25)	(–1.12)	(3.61)
Constant	–247.5***	–103.8	–295.0
	(–3.84)	(–1.22)	(–1.24)
Region dummies (region respondents lived in at 15 years of age)	Yes	Yes	Yes
Size of local government dummies	Yes	Yes	Yes
Log-likelihood	–2119	–901	–303
Left-censored observations	183	89	17
Right-censored observations	8	3	4
Observations	764	336	116

Note: Numbers in parentheses are z-statistics. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Table 2. Interval regression estimates: dependent variable is the amount of the private voluntary contribution

	(1) Total	(2) Low income	(3) High income
*INEQL*Social capital*	0.31	1.63	7.11**
	(0.35)	(1.30)	(2.40)
INEQL	–16.1	–83.6	–0.28**
	(–0.37)·	(–1.38)·	(–2.16)·
Social capital	–1.07	–6.73	–19.8*
	(–0.30)	(–1.30)	(–1.84)
Age	2.78***	2.12***	4.36**
	(5.92)	(3.28)	(2.42)
Marry	–4.11	24.6	–163.3***
	(–0.23)	(1.18)	(–2.67)
Number of children	1.47	2.36	–63.0***
	(0.25)	(0.31)	(–3.36)
Male	2.02	–16.0	48.6
	(0.18)	(–0.99)	(1.41)
Schooling	5.99**	3.36	7.79
	(2.04)	(0.85)	(0.70)
Income	0.04***	–0.03	0.10***
	(3.23)	(–1.26)	(3.50)
Constant	–196.1	215.9	589.6
	(–1.08)	(0.84)	(1.04)
Marginal effect of INEQL	–0.93 (–0.16)	–3.63 (–0.33)	41.6*** (2.60)
Marginal effect of Social capital	0.12 (0.10)	–0.13 (–0.08)	4.43 (1.01)
Region dummies (region respondents lived in at 15 years of age)	Yes	Yes	Yes
Size of local government dummies	Yes	Yes	Yes
Log-likelihood	–2119	–901	–300
Left-censored observations	183	89	17
Right-censored observations	8	3	4
Observations	764	336	116

Note: Numbers in parentheses are *z*-statistics. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.